

# Patients' Good and Bad Surprises: How Do They Relate to Overall Patient Satisfaction?

**R**esearch suggests that a relationship exists between consumer satisfaction and expectations; that is, expectancy disconfirmation influences decisions about future purchases.<sup>1</sup> Deming suggests that organizations will be most successful in the long term if they first understand and then continually improve their capacity to meet and exceed customer needs and expectations.<sup>2</sup> In order to do this, an organization must identify its key customer groups and continually improve its ability to meet their needs. Although much has been written about patient satisfaction, relatively little has been written about health care events that disconfirm patient expectations (that is, by providing services that are either extraordinarily good or bad in the eyes of patients).

This article will explore patient satisfaction defined as patients' intentions about the hospital (that is, brag about, recommend, or return) and expectancy disconfirmation defined as "surprises" reported by patients about their hos-

pital experience. Do patients experience surprises during their hospital stay? Are their expectations exceeded, or do they leave feeling disappointed by the care and service they received? The results of this study show that patients do experience surprises during their hospital stay, that there are specific events associated with these surprises, and that the surprise experiences are important in determining patient satisfaction.

## Background and Research Questions

In 1987, the Hospital Corporation of America initiated a multiyear project to develop a family of customer-based quality measurement systems. These systems were designed to measure satisfaction and quality trends as perceived by key customer groups of a hospital such as patients, physicians, employees, purchasers, and community residents.<sup>3-7</sup>

Included in this family of measures is the Hospital Quality Trends: Patient Judgments System (HQT:PJS<sup>SM</sup>). The HQT:PJS<sup>SM</sup> method captures feedback from hospital inpatients about their recent hospital stay.<sup>8</sup> This system has been used by more than 100 voluntary and investor-owned hospitals for the past five years, resulting in a database of approximately 70,000 inpatients. This study examines selected qualitative and quantitative findings from patients surveyed during 1991.

The specific research questions addressed in this article included the following:

- What percentage of inpatients are surprised by events that occur during their hospital stay?
- What events cause patients to experience either a good or bad surprise while in the hospital?

- How are patients' overall satisfaction level affected by these good and bad surprises?

## Overview of Methods

The HQT:PJS<sup>SM</sup> uses a 68-item questionnaire that is administered by mail to a stratified random sample of discharged hospital inpatients. A sample of patients is selected from a three-month period. Sample sizes range from approximately 150 to 300 patients per hospital. All hospital inpatients are included in the sample frame except

- patients who are discharged against medical advice;
- patients younger than 1 year of age or older than 70 years; and
- patients diagnosed with a mental disorder, substance abuse problem, or brain disorder.

Each selected patient is sent a questionnaire followed by a postcard reminder one week later. Nonrespondents are sent a second questionnaire three weeks after the initial mailing. Response rates average approximately 50% and range from less than 50% to greater than 75%. The survey process is implemented by an independent research firm.

Items from the HQT:PJS<sup>SM</sup> questionnaire are grouped into scales that represent patients' perceptions of different aspects of their experience. Two of these scales are used in the current study. The Overall Patient Satisfaction scale includes three questionnaire items (patients' intent to recommend the hospital, intent to return to the hospital, and self-report of having bragged about the hospital). The Hospitalwide Quality scale consists of 41 items that are used to evaluate the "goodness" of hospital performance in ten areas: admissions, daily care, information,

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nurses, physicians, ancillary services, living arrangements, housekeeping, discharge, and billing.\* The analyses summarized in this article were derived from patients' responses to the HQT: PJS<sup>SM</sup> questionnaire.

**Qualitative analysis of patients' verbatim comments: Sources of good and bad surprises.** Qualitative content analysis of patients' written verbatim comments were conducted in an open-ended question that states, "Did anything happen during your stay in the hospital that surprised you? If so, please tell us what it was." Patients were provided only with the following prompts: "Good Surprise," "Bad Surprise," and a space to write a description of surprises. Patients were not provided with examples of good or bad surprises.

The purpose of the qualitative analysis was to determine the frequency and sources of events that patients viewed as good or bad surprises. Comments from approximately 2,160 patients representing 12 hospitals were used. These hospitals were selected to represent different regions of the country and different sizes of hospitals.

The content analysis of patients' written comments was performed by two trained independent coders. These coders read the patients' comments and categorized them into specific "good surprise" and "bad surprise" categories. The coders began using a practice set of patients' comments from nonselected hospitals. The results from the two coders were then compared and analyzed for differences. Differences in categori-

zation were discussed and category definitions were revised. This final set of categories was used to code the verbatim comments from the 2,160 patients in the sample of 12 hospitals. To determine the interrater reliability, a series of intraclass correlations were computed for each category of good surprises and each category of bad surprises. The reliabilities for the good surprise categories ranged from 0.81 to 1.00, with an average of 0.92. The reliabilities for the bad surprise categories ranged from 0.89 to 0.96, with an average of 0.94. The following provide illustrative examples of good and bad surprise verbatim comments:

- *Good surprise*—"The special supper with my husband was nice, and also he was brought a tray of food during the first day." "I received flowers from the hospital! Thanks. The special dinner was great!" "Warm, friendly nursing staff."

- *Bad surprise*—"IV started poorly at least four times. Wrong amount of medication delivered." "There was [sic] what I feel to be excessive bills which I could not explain and were not justified in my mind. Small items were overcharged; that is, courtesy kit, medical supplies." "The rude attitude of respiratory therapy staff."

### Quantitative Analysis

Data from 69 acute medical-surgical hospitals representing 15,019 patients surveyed during 1991 were used for the following analyses. These hospitals and respondents are profiled in Table 1 (p 91).

The primary purpose of the quantitative analysis was to measure the independent contribution of selected variables to explain variation in the overall patient satisfaction. The dependent variable, overall patient satisfaction, is an indicator of patients' allegiance to a hospital and reflects behavioral intentions to return to a hospital, to recommend a hospital, or to brag about a hospital.

We hypothesized four broad classes of variables (for which measures were available) that could potentially influence patient satisfaction. The following categories of variables were used as potential predictors of patient satisfaction:

- *Patient sociodemographic characteristics*—Length of stay, type of diagnosis (for example, neurology, obstetrics-gynecology, gastroenterology, orthopedics, cardiology, oncology, pain experienced during hospital stay), and perceived health benefit (that is, how much patient was helped by hospital stay);

- *Patient-based evaluations of hospital quality*—Hospitalwide quality scale (that is, based on ratings of 41 specific characteristics of the hospital's care and services; see Appendix A, p 93); and

- *Patient report of surprises*—Good surprise reported, bad surprise reported, and both a good and a bad surprise reported.

Bivariate analyses were conducted to determine which of the independent variables were significantly associated with the dependent variable, overall patient satisfaction, and the magnitude of the association between the different potential predictor variables. A common least squares multiple regression was performed to estimate the independent effect of each respective independent variable on overall patient satisfaction. To determine the relative magnitude of the effects of type of surprise, overall satisfaction scores were adjusted for all predictor variables.

Other analyses were conducted to determine the percentage of patients reporting a good or bad surprise and the difference in overall patient satisfaction scale scores for patients who reported a good or bad surprise only, both a good and a bad surprise, or no surprise.

### Results

The results indicate that 39% of inpatients were surprised by some aspect of their hospital stay. Sixteen percent reported having a good surprise during their hospital stay, 13% reported a bad surprise, and 10% reported both a good and a bad surprise.

As mentioned above, patients were asked to describe the good or bad surprises they had received. Most comments fall into the 20 categories shown in Figure 1 (p 91). The most common sources of good surprises were overall quality of care (16%), attitude/atten-

\*A thorough discussion of the development, reliability, validity, and application of this measurement system can be found in Nelson et al: *The Patient Judgment System: Reliability and validity*. QRB 15:185-191, 1989.

tion/concern from nurses (11%), obstetrics and baby care (10%), outcome of the hospital stay (9%), extras/perks (other than for baby; 6%), and quality/availability of food and beverages (6%). The most common sources of bad surprises were outcome of the hospital stay (7%), obstetrics and baby care (5%), value/costs of care (4%), restfulness of atmosphere (4%), roommates (4%), attitude and competence of staff (other than doctors and nurses; 4%), and treatment of family/friends/visitors (4%).

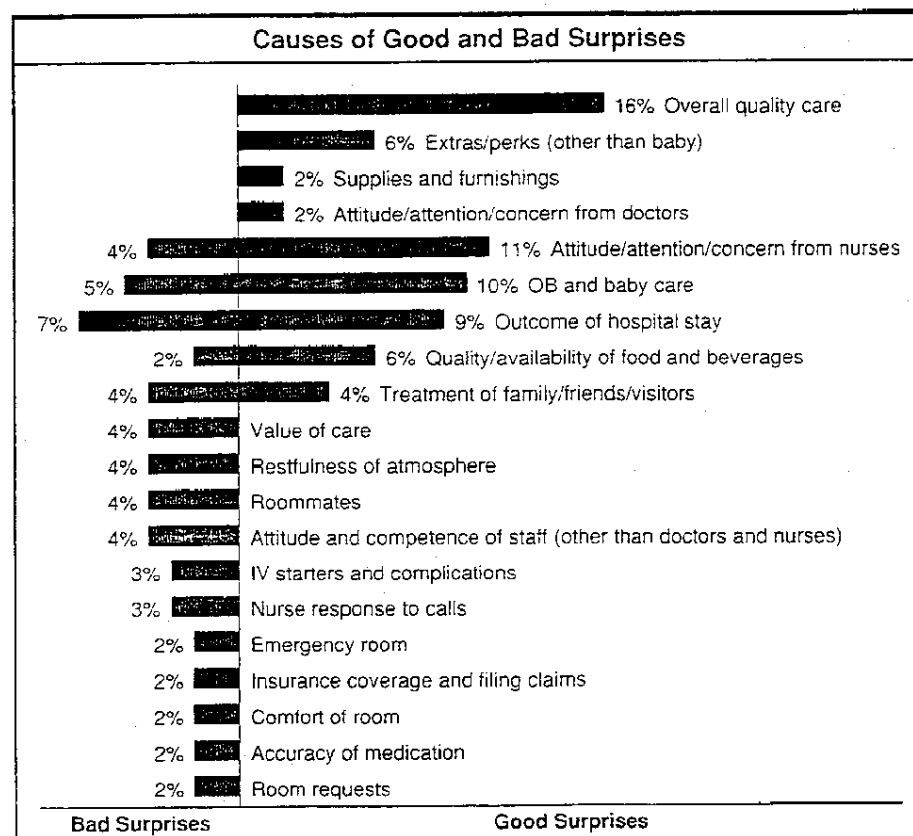
Figure 1 shows that there is considerable overlap in sources of good and bad surprises in the following five areas: outcome of the hospital stay, obstetrics and baby care, attitude/attention/concern from nurses, treatment of family/friends/visitors, and quality/availability of food and beverages. This means that these five categories of events can be the source of either good or bad surprises in the view of patients. On the other hand, some of the items listed previously account for solely good or bad surprises. For example, 4 topics (the first 4 listed in Figure 1) were reported solely as sources of good surprises, and 12 produced only bad surprises.

The classification that divided patients into three mutually exclusive groups (that is, good surprise reported versus bad surprise reported versus both a good and a bad surprise reported) indicated that good surprises were positively associated with overall patient satisfaction; that is, patients who said they received a good surprise at some point during their hospital stay gave higher ratings to overall satisfaction than did other patients who reported having a bad surprise (Figure 2, p 92). Patients who had a good surprise had a mean rating on overall patient satisfaction that was 25 points higher (on a 0-100 scale) than patients who had a bad surprise. Interestingly, patients who had both a good and a bad surprise gave a lower rating to overall satisfaction than did patients who received no surprise at all.

A multiple regression was performed to determine the impact of the predictor variables on overall satisfaction, (that is, the scale formed from the rec-

**Table 1. Characteristics of Patients and Hospitals Analyzed**

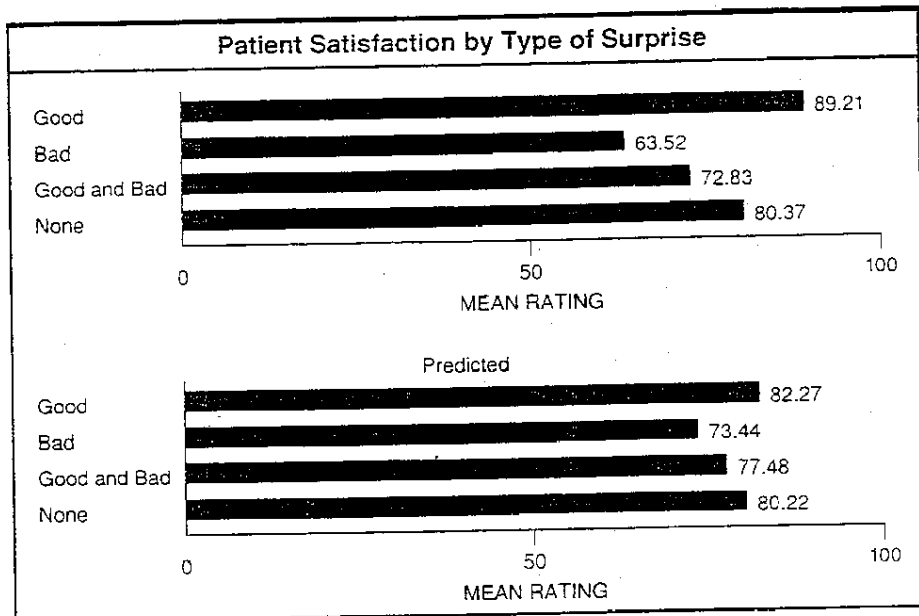
Patient Characteristics (N = 15,019)		
Age:	Mean years	50
Gender:	Female	63%
Education:	Less than high school	24%
	High school	26%
	More than high school	51%
Race:	White	89%
Insurance:	Medicare	35%
	Medicaid	10%
	Private insurance	66%
	Other	20%
Hospital Characteristics (N = 69)		
Size:	Mean number of beds	214
Length of Stay:	Mean number of days	6
Occupancy Rate:	Mean percent occupied	53%
Region:	West	5%
	South atlantic	59%
	East south central	16%
	West south central	21%



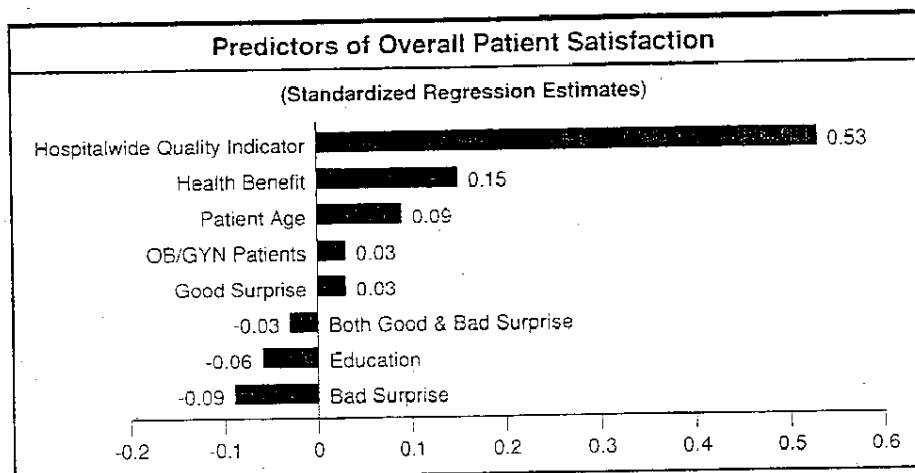
**Figure 1.** These data are based on verbatim comments from 2,160 patients representing 12 acute care, medical-surgical hospitals.

ommended, return, and brag items). Five of the patient-based, quality-related predictor variables (receiving a good surprise, receiving a bad surprise, receiving both a good and a bad surprise, health benefit, and hospitalwide

quality) had a statistically significant, independent effect (Figure 3, p 92). In addition, three patient characteristics (patients' age, patients' education, and obstetrics/gynecology diagnostic group) had a significant impact on



**Figure 2.** These data are based on 15,019 patient ratings of overall satisfaction. Actual values reflect overall satisfaction ratings of the mutually exclusive patient groups on the basis of type of surprise reported. Predicted values reflect estimates of overall satisfaction for each group adjusted for patient sociodemographics, health characteristics, and evaluations of quality.



**Figure 3.** These data are based on questionnaire responses from 15,019 patients representing 69 acute care, medical-surgical hospitals.

explaining overall patient satisfaction. The regression model explained 49% of the variance in overall patient satisfaction. The results showed that the hospitalwide quality scale was the strongest predictor (beta weight = 0.53) of satisfaction, followed by health benefit, patient age, and receiving a bad surprise. All of the predictor variables influenced patient satisfaction in the direction expected. To assess the magnitude of the relative effects of good surprises, bad surprises, and both good and bad surprises, overall satisfaction scores were adjusted for all patient sociodemographic characteristics,

patient health characteristics, and patients' evaluations of hospitalwide quality. The predicted scores are displayed in Figure 2. Although these estimates show that the mean differences between the groups decreased, it is clear that bad surprises have the greatest impact on satisfaction.

### Discussion

It is interesting to note what patients mentioned as good and bad surprises. Many themes were related to the interpersonal aspects of health care delivery—the attitude and amount of attention shown by nurses, perks,

treatment of family and friends, and so on. Noticeably lacking were specific comments related to issues such as the skill of physicians, availability of state-of-the-art technology and equipment, and the appearance of hospital facilities. This suggests that patient satisfaction might be improved by focusing quality improvement work on interpersonal aspects of patient care, given that expected levels of medical care, nursing, and technology are in place.

What is "take it for granted" versus expected versus exciting quality? As shown in Figure 1, certain aspects of patients' experiences created only a good or only a bad surprise, but several areas were sources of either a good or a bad surprise. For example, perks were only associated with good surprises, and value/cost of care was only associated with bad surprises, but attention and caring from nurses led to either a good or bad surprise. This observation supports work done by Kano,<sup>7</sup> which suggests that, from the customer's point of view, there are three different types of quality characteristics:

- "Take-it-for-granted" quality attributes, which a hospital *must* possess to be acceptable (such as physician skill);
- Expected quality attributes, which are necessary and expected (such as caring and concerned nurses); and
- Exciting quality attributes, which are very welcome but not thought to be necessary before experienced. These surpass customer expectations and therefore delight them (such as baskets of take-home baby care products for obstetrics patients or making special accommodations for family and friends).

Reexamining Figure 1 from this perspective, "extras/perks," "supplies/furnishings," and "special concern from doctors" could be classified as areas in which superior hospital performance could lead to exciting levels of quality.

In contrast, areas such as "value of care," "roommates," and "tuberculosis starters" are examples of take-it-for-granted quality. Patients assumed their hospital stay would result in reasonable costs, compatible roommates, a successful, first-time intravenous tub. starts. These are areas in which the hospital gains no good will from meeting

expectations but in which failure to perform as expected could produce dissatisfaction and a bad surprise.

Figure 1 gives examples of what patients consider expected quality attributes—areas such as nurse attention and concern, food quality, accommodation of visitors, and health benefit/outcomes. These are all areas in which customers have performance expectations that can be placed on a gradient running from poor performance to excellent performance in which higher levels of performance are associated with higher satisfaction scores.

These results suggest that it would be wise for most hospitals to continually improve their performance in the take-it-for-granted and expected areas. The superior hospital might go further by first identifying areas of exciting quality and then redesigning its internal processes so that patients' expectations can be surpassed consistently. One example of an effort to design exciting quality into the core patient care delivery process comes from a hospital's discovery in the course of doing a special telephone study on same-day surgery patients—that most of its patients were pleasantly surprised to receive a phone call from the hospital. The hospital learned that many patients appreciated the effort the hospital was taking to see how they were doing at home. Based on this insight, the hospital redesigned its aftercare process for certain types of same-day surgery patients to include telephone follow-up two to three days postdischarge. These calls focused on

- finding out if the planned aftercare activities were understood and were being carried out;
- identifying unanticipated problems that had arisen after discharge; and
- asking a few questions to measure satisfaction and health status.

This approach—that is, designing exciting quality into the core patient care delivery process—can be mastered by following a quality-by-design approach.<sup>8,9</sup>

Is it better to create good surprises or prevent bad ones? The regression analysis provides some insight as to which variables have the greatest impact on patients' satisfaction. The

Appendix A. Method of Calculating Scales			
The following table shows how various questions from the Hospital Quality Trends: Patient Judgments System (HQT:PJS <sup>SM</sup> ) questionnaire were combined to form the scales referenced in this article.			
Scale Name	No. of Questions Composing This Scale	Question No. in the HQT:PJS <sup>SM</sup> Patient Questionnaire	Content of the Questionnaire Items
Admissions	3	Q.12–Q.14	Efficiency, preparation, attention to needs
Daily care	4	Q.15–Q.18	Consideration of needs, coordination of care, helpfulness and cheerfulness, sensitivity to problems
Information	3	Q.19–Q.21	Ease of getting information, instruction informing family and/or friends
Nurses	5	Q.22–Q.26	Skill, attention, response, concern and care, information given
Physicians' availability	6	Q.27–Q.32	Attention, availability, concern and care, information given, coordination
Ancillary services	5	Q.34–Q.38	Laboratory, x-ray, physical therapy, transportation, IV starters
Living arrangements	6	Q.39, Q.42, Q.44–Q.47	Privacy, restfulness of atmosphere, signs and directions, building, parking, provisions for family and friends
Housekeeping condition	3	Q.33, Q.40–Q.41	Housekeeping, condition of room, supplies and furnishings
Discharge	3	Q.48–Q.50	Procedures, instruction, coordination of aftercare
Billing	2	Q.51–Q.52	Explanations, efficiency
Food	1	Q.43	Overall quality of food
Hospitalwide quality	41	Q.12–Q.52	All questions included in the admissions, daily care, information, nurses, physicians, ancillary services, living arrangements, housekeeping, discharge, billing, and food scales listed above
Overall patient satisfaction	3	Q.56, Q.58–Q.59	Brag, recommend, return
Perceived health	1	Q.54	How much patient was helped by the hospitalization

findings suggest that a bad surprise influences patient satisfaction more than a good surprise. The implication for the hospital is that, although it may be easier to create or design good surprises than to prevent bad surprises, the overall patient satisfaction benefit to the hospital of preventing bad surprises may be greater than engineering good surprises.

This study has several limitations. First, the qualitative analyses are based on comments made by 2,160 patients discharged from 12 hospitals, and the quantitative findings are derived from ratings made by 15,019 patients discharged from 69 hospitals. Although the numbers of patients are large and drawn from several regions of the country, all patients were discharged from general medical-surgical hospitals in the same system of care, and therefore the generalizability of the results is limited.

Second, the qualitative analysis, although performed with careful planning and in a manner to promote interrater reliability, relied on a system of classifying comments that was generated by the research team on the basis of content analysis. There are many other classification schemes that could have been developed and that may have produced different findings. Third, the qualitative material came from the written comments of discharged patients in response to open-ended questions. Whereas 39% of patients elected to provide a written response, the remainder waived the opportunity, and thus their experiences were not captured in the qualitative data base. Fourth, the quantitative analysis was used to determine factors that explain the variation in patients' satisfaction and succeeded in accounting for almost one-half of the variation in satisfaction.

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Nevertheless, all the information was collected from patients at the same point in time, and consequently, it is not possible to separate out the causes from the effects.

In light of these limitations and the findings reached, useful next steps might include

- expanding the data base used for the qualitative analysis of patient surprises and continuing to do more research on all three levels of patient satisfaction (that is, expected, exciting, and take-it-for-granted) for different types of patients in assorted health care settings;

- gathering data on the probable predictors of overall satisfaction closer in time to their occurrence and then collecting "downstream" data on over-

all satisfaction separately at a later time; and

- most importantly, working to link directly together the measurement of patient satisfaction and health status (outcome measures) with the "drivers" of patient satisfaction and health benefit (process variables) and with the design or redesign of the health care delivery system for selected patients served by distinct health care providers.<sup>20</sup>

This article is based on the proposition that all health care organizations exist to meet the fundamental needs and expectations of the populations they serve. Therefore, health care providers who are serious about improving quality may want to do their own "customer research" to determine what they might do to delight their patients; what they must do to avoid disappointing them; and what they should do consistently, efficiently, and compassionately to meet basic expectations of their patients. ©

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